
VIII. *Descriptions of four new British Lichens.* By Dawson Turner,
Esq. M. A. F. L. S.

Read January 18, 1803.

UPON the four Lichens of which I now take the liberty of offering descriptions to the Linnean Society, I have little more to say, in general, than that they do not appear to me to be noticed, either in the works of Professor Hoffman, in Dr. Acharius's comprehensive *Lichenographia Succicu*, or in the productions of any other author with which I am acquainted. To say more would be presumption; for so many botanists have treated of Lichens in partial Floras, and introduced what they considered as new species, not only without figures, but with very inadequate characters, that it is possible these also may have been previously described: but, even should this prove the case, I trust the Society will not think I have done an altogether useless office, in endeavouring, by coloured figures, and more ample descriptions, to remove them in future beyond the reach of doubt. Thus much I may be allowed to say, that they are unknown to Dr. Smith, Mr. Dickson, and every other botanist who has at present seen them; and if, in the particulars I have stated respecting each, I should appear prolix, I beg leave to give it as my humble opinion, that, from the vast extent of the genus Lichen, particularly the *crustaceous* division of it, nothing less than the most detailed account of every species, pointing out its differences from those of its congeners with which it is most likely to be confounded, will ever suffice to

to the obtaining a knowledge of them: and I cannot but think that there is in botany no greater desideratum than a work on the Lichens, conducted on these principles, and at the same time carefully collecting the synonyms of the different authors. I must be indulged in one more remark, arising from this subject, which is that while some botanists, anxious to create new species, have not made among these the same* allowances as among other vegetables, for differences caused by the several periods of their age, by their situation, by the substances on which they grow, or by the aspects to which they are exposed, it appears to me that others have run still more hastily into the opposite extreme, and united plants which are most truly and specifically distinct, merely because in some particulars they approach each other in different stages of their growth; not considering that among other genera of the class *Cryptogamia*, instances are occasionally found of plants bearing in age a stronger resemblance to some other species than to the appearance they had themselves when young: but that similitude between one individual, while verging upon decay, and another in its highest perfection, is very far indeed from constituting a proof of identity. Great difficulties are unquestionably opposed to our researches among the Lichens; but these difficulties are increased tenfold, if we examine them without at the same time endeavouring to trace them through their

* Very strong proofs in favour of this observation are afforded by *Lichen muscorum* and *L. impressus* of Acharius, both which are almost universally considered as distinct species; though any botanist who will be at the trouble of examining the former may soon be convinced that it is nothing more than the common *L. parasemus*, which, in passing from a wall or moss, necessarily acquires a less compact crust; a thing I have myself repeatedly traced: and as for the latter, I am as fully convinced, not so much from my own observations as from the suggestions and specimens of my acute friend Dr. Scott, Professor of Botany in Dublin, that it is only the scutella of *L. scruposus*, occupying the leaves of *L. pyxidatus*.

various gradations, or if we form opinions without having seen them in different states; for no error is more pernicious than that of those botanists who promise themselves to acquire a knowledge of them by means of their herbaria alone, as, however useful single specimens of this tribe may be for the sake of reference, the naturalist that puts too much reliance upon them will find, as soon as he meets with the plants in their places of growth, that he has studied at home for little else than to confuse others, and bewilder himself.

LICHEN CHRYSOCEPHALUS.

1. LICHEN crustâ granulosâ pallidè flavâ vix cohærente; bacillis nigris; tuberculis aurantiacis, margine pallidiore.

Tab. VIII. Fig. 1.

Innascitur sudibus antiquis prope Sotterley in Suffolciâ.

Crusta latè effusa, modicè crassa, e granulis minutis, pallidè et interdum viridi flavis, nitidis, subglobosis, formæ tamen nequam certæ, hîc congestis, illîc sparsis, vix cohærentibus constat. Bacilla, ex hâc, nigra, altitudine linearia vel sesquilinearia, filiformia, crassitie humani capitis pilos vix æquantia, copiosè assurgunt. Horum apicibus insident tubercula rotunda, superficie plana aut convexiuscula, quorum disci, per pulverem quo replentur, aurantiaci, margines autem pallidè flavi, crustæque ferè concolores sunt. Plantâ senescente, pulvis e tuberculis excidit, unde concavi nigrique fiunt, mox tubercula ipsa delabuntur et bacilla inania restant. Varietatem hujus plantulæ inveni, cujus tubercula, ferè sessilia, glomeratim coaccervantur.

The only place in which I have hitherto seen this Lichen is at Sotterley, near Beccles in Suffolk, where I found it, April 7th 1802,
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in company with Mr. Dickson, on old pales that surround the park of Miles Barnes, Esq. I am acquainted with no species, either British or foreign, for which it can possibly be mistaken; and indeed it is nearly allied to hardly any, except *Lichen sphaerocephalus*, from which the yellow powder of its tubercles affords at first sight an obvious and certain difference: were it not for this circumstance, it might in some cases be difficult to discriminate between the two plants, as it is well known that *L. sphaerocephalus*, from being seldom provided with any crust of its own, has been alternately placed among the Fungi and Lichens, and that, though it generally arises from the naked trunk of a hollow tree, or from a decaying post, it sometimes shoots up among other species, thereby tending greatly to mislead an inexperienced observer. On this account it appeared at first sight so singular that such tubercles as those of *Lichen chrysocephalus* should be found with such a crust, that it was long before I could persuade myself they really belonged to each other; but, after repeated examinations, I see them so constantly together, that I can no longer feel doubts on the subject. This species most frequently grows in irregularly oblong patches, about four inches long, and two wide; the pale though bright yellow of its crust makes it conspicuous at a distance; yet, unless closely examined, it is easily overlooked for *flavus*, *candelarius*, or some other of the more common species. It belongs to Dr. Acharius's eighth tribe, the *Calicia*, and must be considered a highly interesting Lichen, as forming, together with *L. inquinans* of English Botany, a link that unites the plants of this division with the *crustaceous* tribe. At the same time, however, it deserves to be noticed, that many of those referred hither in the *Lichenographia Suecica* have no pretensions to such a situation; and, unless carried back to their former place among the Fungi, must involve this difficult part

of botany in greater confusion than ever. In this number is *L. acicularis*, with which, from its former name of *fulvus*, it might be presumed that *L. chrysocephalus* had a strong affinity: nor is there any thing in the specific character that satisfactorily destroys such an idea; and yet, considered as to their substance, nature, tubercles, or crust, they can by no means be arranged even in the same genus.

LICHEN FUSCELLUS.

2. *L. crustâ crassâ lævi areolatâ griseâ intus nigrâ; thalamis planis subimmersis minutis atris.*

Tab. VIII. Fig. 2.

Habitat in ecclesiarum muris apud Bradwell et Gorlestone in Suffolciâ.

Crusta absque normâ effusa, lineam et ultra crassa, superficie æqualis, lævis, rimosa, aut, ut aptiùs dicam, in areolas figuræ magnitudinisque incertæ diffracta; colore extùs pallidè griseo, intùs nigro. Thalami valde minuti, atris, satis copiosè in crustæ areolis nascuntur; juniores, ut in *L. endocarpo* et *miniato* immersi; adultiores ferè sessiles; omnes ambitu subrotundi, superficie plani, nunquam, ut in Verrucariis reliquis, pertusi, marginis expertes. Crusta aquâ madefacta colorem non mutat, sin digito fricetur fit viridis, speciemque pristinam nunquam reversuram, omnino amittit.

This Lichen is by no means uncommon on churches about Yarmouth, growing in scattered patches of irregular size and figure, and generally preferring loose sand stone at no great distance from the ground. From its dull colour, scarcely differing from that of the substance on which it grows, and its imperfect appearance, it is easily overlooked; yet is, nevertheless, not only a distinct
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but also an interesting species, as it shows how nature, by insensible gradations, unites even those tribes that are most different from each other; its thick crust and immersed thalami, not punctured at the summit, leaving it almost doubtful whether it has not as good a claim to a situation among the *Endocarpa* as among the *Verrucaria*. I should, however, certainly place it with the latter; but even here I must be allowed again to observe, that Dr. Acharius has introduced several plants which, in my opinion, belonged far more properly to the Fungi; and I trust that these remarks will not be considered as made with a view to detract from the character of that excellent botanist, of whose merits I am fully sensible; for even he has entertained doubts upon the subject: and it may be hoped, that in the new edition now preparing of his *Lichenographia*, he will reject all those species that are not provided with a real crust, separable, or at least easily distinguishable by the eye from the substances to which they are attached. From Dr. Acharius's description, it might be supposed that the present species is the same as his *L. griseus*: but it is to be observed, that he takes up that plant on the authority of Dr. Persoon, who, in the place referred to, says that the crust is green within, and turns to that colour also, if moistened; in both which points it entirely disagrees. There is a Lichen found occasionally on old oaks, and not at present, I believe, noticed by any author, from which it seems to me more probable that *L. fuscillus* is not specifically distinct. They agree in colour and appearance, but differ in the thalami of that which grows on wood not being of so regular a form as those of the other, as well as in its crust being far less thick: and hence I have not ventured upon making them the same; for in plants themselves so minute we cannot but expect the species to be separated by minute differences.

3. LICHEN LUTEO-ALBUS.

L. crustâ leprosâ tenuissimâ albâ; scutellis vitellinis; junioribus planiusculis, adultioribus tuberculiformibus.

Tab. VIII. Fig. 3.

Habitat in cortice arborum; prope Croydon, D. Dickson: in insulâ Monâ, D. Davies: in comitatu Durham, D. Harri-man: apud Acle et Coltishall in Norfolciâ.

Crusta leprosa, tenuissima, alba, nitida, ab arborum, quibus in-nascitur, truncis vix nisi colore dignosci potest. Hanc ferè ob-tegunt scutellæ, ambitu subrotundæ, numerosissimæ, confertæ, magnitudine papaveris seminum, initio planiusculæ, vel levis-simè concavæ, margine tenuissimo, et si per lentem attentè ob-serventur, pallidiore cinctæ; prògrediente ætate, tuberculorum formam æmulantes, et sæpe, dum madent, subglobosæ. Sic-catæ fiunt compressæ. Color his plerumque vitellinus inter-dum aliquantulùm virescit.

Among the crustaceous Lichens scarcely any subdivision is at-tended with more difficulty than that with yellow shields; for what some authors have considered as varieties of *Lichen can-delarius**, and others have regarded as distinct species, are so nu-merous, and occur in so many different forms, that this single circumstance has given rise to an infinity of perplexity. It is not, therefore, without the greatest diffidence that I now hazard

* In speaking of *L. candelarius*, I think it necessary to observe, that I do not intend the plant so called by Dr. Acharius, but that which Professor Hoffman has figured in his *Plantæ Lichenosæ* under the name of *L. vitellinus*, and which by Mr. Dickson and most other botanists is considered the true *L. candelarius*.

the introduction of what I suppose to be a new species of this tribe; nor should I have ventured upon so doing, had I not believed the present plant to have been altogether overlooked by authors. Yet, spite of this circumstance, it may be presumed, from the various parts of the kingdom in which it has already been found, that it is not of very uncommon occurrence. It generally grows upon old trees, and not unfrequently in the hollow parts of them, where it is immediately conspicuous by its numerous yellow shields. The indefatigable researches of Mr. Harriman have also discovered it, though very sparingly, upon stone: but in this case care must be taken to discriminate between it and *L. aurellus* of Hoffman, from which it principally differs in the nature of its crust, and in the shields assuming, as they grow old, the form of tubercles. These two circumstances will also at all times keep it separate from any of the appearances of *L. candelarius*, the crust of which is always pale yellow and powdery. Instances may, however, occasionally be found of the shields of that Lichen occurring without any crust. But even in such case the two plants are not to be confounded; for the scutellæ of *L. candelarius* are almost always deeply concave, and are uniformly of a much lighter colour, as well as larger size, than those of *L. lutco-albus*. From *L. cerinus*, with which it agrees in crust, it differs in the shields never having a white margin in their smaller size, and in their being destitute of the greenish hue so remarkable in that species. From Mr. Dickson's *L. luteus*, its leprous, inseparable crust, its more pale shields, and the form they assume in an advanced state, equally separate it. The colour of the shields keeps it likewise apart from *L. rupestris* of Acharius (*L. calvus* of Dickson), in which species they are considerably darker, and, when young, are immersed in the very substance of the rock on which they grow; nor are they by any means either so numerous or so small.

small. It is now many years since I first found *L. luteo-albus* on elms at Acle in Norfolk; Mr. Dickson showed it to me growing plentifully on lime trees at Croydon, and I have lately found it on willows at Coltishall.

4. LICHEN PORRIGINOSUS.

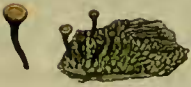
L. crustâ tenui pulverulentâ albo-virescente: scutellis fuscis; junioribus niveo-marginatis concavis, adultioribus tuberculiformibus.

Tab. VIII. Fig. 4.

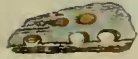
Innascitur ulmi montanæ cortici apud Caistor prope Yarmouth.

Crustam habet tenuem, pulverulentam, sparsam, e granulis minutissimis, globosis, neququam cohærentibus, constantem; siccam albam, madidam pallidè virescentem, Byssumque botryoidem valdè simulantem. Scutellæ huic insident raræ, subrotundæ, magnitudine ferè Ervi seminis, initio concavæ, disco fuscæ, margine nivæ; progrediente ætate fiunt planæ, mox convexæ et tuberculiformes, marginis omnino expertes. Madefactæ ceraceam quandam et ferè subdiaphanam præstant speciem; siccatae atro-fuscæ evadunt.

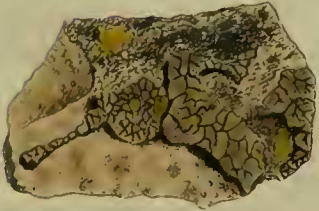
The situation which naturally belongs to this Lichen, at least among the British species, is between *subfuscus* and *vernalis*, with both which it has points of striking affinity. Its shields in colour approach nearly to those of the former, but differ in regularly assuming, as they grow old, the shape of tubercles; and, still more strongly, in their border, while young, being of a snowy white, and of a substance quite dissimilar to the crust; whereas the scutellæ of *L. subfuscus* are for the most part more concave in age than in youth, and their margin always appears not only to be homogeneous with the crust, but also in general to be a mere elevation



1 Lichen chrysocephalus



3 Lichen later albus



2 Lichen fuscellus



4 Lichen porriginosus